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January 2, 2008

Mail Stop Certificate of Corrections Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Re: U.S. Patent No.: 7,194,100
Issued: March 20, 2007
Title: "METHOD FOR INDIVIDUALIZING A HEARING AID"
Filed: April 10, 2001
Inventor: Volker Kuhnel et al.
Our Docket: TSW-33495

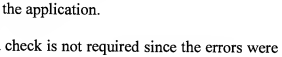
Sir:

A Certificate of Correction under 35 U.S.C. 254 is hereby requested to correct Patent Office printing errors in the above-identified patent. Enclosed herewith is a proposed Certificate of Correction (Form No. PTO-1050) for consideration along with appropriate documentation supporting the request for correction.

It is requested that the Certificate of Correction be completed and mailed at an early date to the undersigned attorney of record. The proposed corrections are obvious ones and do not in any way change the sense of the application.

We understand that a check is not required since the errors were on the part of the Patent and Trademark Office in printing the patent.

Very truly yours,



Michael W. Garvey, Reg. No. 35878

PTO/SB/44 (09-07)
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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,194,100

APPLICATION NO.: 09/829,700

ISSUE DATE : March 20, 2007

INVENTOR(S) : Volker Buhnel et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 3, line 26:	Please delete "ottingen".
Column 4, line 16:	Please delete the letter "a" after gradient, and insert therefor --*a*--.
Column 4, line 18:	Please delete "a_a", and insert therefor --a_a--.
Column 4, line 27,	Please delete "a_1", and insert therefor --a_1--.
Column 4, line 27,	Please delete "a_2", and insert therefor --a_2--.
Column 4, line 28,	Please delete "a_3", and insert therefore --a_3--.
Column 6, line 20,	Please delete "the", and insert therefor --an--.
Column 6, line 21,	Please delete "the".
Column 6, line 52,	Please insert --a--before the word "level".
Column 6, line 53,	Please insert --a--before the word "hearing".
Column 6, line 55,	Please insert --a--before the word "constant".
Column 6, line 56,	Please insert --an--before the word "individual".

MAILING ADDRESS OF SENDER (Please do not use customer number below):

Michael W. Garvey, Pearne & Gordon LLP
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(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,194,100

APPLICATION NO.: 09/829,700

ISSUE DATE : March 20, 2007

INVENTOR(S) : Volker Buhnel et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 7, line 20, Please insert --a--before the word "gradient".

Column 7, line 21, Please insert --a--before the word "hearing".

Column 7, line 23, Please insert --an--before the word "individual".

MAILING ADDRESS OF SENDER (Please do not use customer number below):

Michael W. Garvey, Pearne & Gordon LLP
1801 East 9th Street, Suite 1200, Cleveland, Ohio

Amendments to the Specification:

Please replace the last paragraph beginning at page 5 and continuing onto page 6, with the following replacement paragraph:

One possibility to use the loudness individually perceived in response to selected acoustic signals as a variable for further processing is offered by the method schematically illustrated in Fig. 1 and described for instance by O. Heller in "Auditory Range Audiometry Employing the Categorization Method", Psychological Articles 26, 1985, or by V. Hohmann in "Dynamics Compression for Hearing Aids, Psychoacoustical Fundamentals and Algorithms", thesis at the Univ. of Göttingen, VDI-Verlag, Series 17, No. 93, or by Thomas Brand in "Analysis and Optimization of Psychophysical Procedures in Audiology", (Oldenburg: Library and Information System of the University, 2000 - 148 pp., Oldenburg, Diss., Univ., 1999, ISBN 3-8142-0721-1). According to that method, a person I is exposed to an acoustic signal A which can be varied in a generator 1 in terms of its spectral composition and its transmitted sound pressure level. The person I analyzes i.e. "categorizes" the acoustic signal A just heard by means of an input unit 3 within for instance eleven loudness steps or categories as illustrated in fig. 1. These steps are assigned numerical weights for instance from 0 to 10 categorical units (cu).

Please replace the second full paragraph on page 6 with the following replacement paragraph:

In fig. 2 the loudness L, registered by category scaling per fig. 1, is expressed as function of the mean sound pressure level in dB-SPL for a sinusoidal signal of frequency f_k. As is evident from the pattern in fig. 2, the loudness $[[K_{kN}]]$ L_{kN} of the standard in the graph chosen increases in nonlinear fashion with the signal level; in a first approximation the slope for persons with normal hearing is expressed for all critical bands by the regression line indicated as N in fig. 2 with a gradient α_N in [categories per dB-SPL].

individual ~~HVLS/~~LOHL function, represented by the dashed line, established via three data sampling points for building a suitable model as explained below.

Please revise the sixth full paragraph of page 7 of the specifications as follows:

The following model has been found to be particularly useful in determining the gradient a as a function of hearing loss ~~HV/~~HL (for hearing loss between 20 dB and 100 dB):

$$\log_{10} a_a \times \text{~~HV/~~HL} + b_a \times \log(\text{~~HV/~~HL}) + VP_{consta}$$

Please revise page 8 of the specifications as follows:

for 20 dB<~~HV/~~HL<100 dB,

where

- a = gradient of the loudness function,

~~HV/~~HL = hearing loss in dB,

a_a, b_a = constant function parameter, and

VP_{consta} = the individual function parameter which adapts the ~~HVLS/~~LOHL factor to the data sampling points a_1, a_2, a_3, ...

It should be mentioned at this juncture that, having been extrapolated from several data sampling points, the individual ~~HVLS/~~LOHL factor illustrated in FIG. 3 shows less dispersion-related deviation than do the sampling points by themselves, thus providing a better reflection of changes in individual perception. Although it would be possible to obtain the targeted reference settings for the hearing aid already on the basis of this individual ~~HVSL/~~LOHL factor, to determine the gradient a at 0 dB hearing loss by extrapolation (dotted curve in

Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-2 (canceled).

3. (previously presented) A method for individualizing a hearing aid in adaptation to a loudness perception of an individual, said method comprising the steps of:

adjusting the hearing aid using both (1) measured and quantified loudness perception parameters of the individual weighted by a first factor and (2) normal loudness perception parameters weighted by a second factor; and

adjusting compression and/or amplification in the hearing aid, for which purpose the compression and, respectively, the amplification are each determined as a function of frequency, wherein

for determining the compression, the loudness perception of the individual is quantified by means of a LOHL factor which is determined by loudness scaling at a minimum of one frequency.

4. (previously presented) The method as in claim 3, wherein the LOHL factor is modeled using the equation:

$\log_{10}(\alpha) = a_a \times HL + b_a \times \log(HL) + VP_{consta}$ where

α = a gradient of the loudness function,

HL = a hearing loss in dB,

a_a, b_a = constant function parameters, and

VP_{consta} = an individual function parameter which adapts

Col. 6

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the LOHL factor to data sampling points α_1, α_2, $\alpha_3, \ldots,$

and that VP_{consta} is determined on the basis of a loudness scaling performed at a minimum of one frequency.

3

5. (previously presented) A method for individualizing a hearing aid in adaptation to a loudness perception of an individual, said method comprising the steps of:

measuring and quantifying loudness perception parameters of the individual, weighted by a first factor;

weighting of normal loudness perception parameters by a second factor;

combining the weighted loudness perception parameters of the individual with the weighted normal loudness perception parameters to define a weighted loudness parameter; and

using the weighted loudness parameter for adjusting the hearing aid, wherein

compression and/or amplification is/are adjusted in the hearing aid, for which purpose the compression and, respectively, the amplification are each determined as a function of frequency, and wherein,

for determining the amplification, the loudness perception of the individual is quantified by means of an HLL0 factor which is defined by loudness scaling at a minimum of one frequency.

3

4 6. (previously presented) The method as in claim 5, wherein the HLL0 factor is modeled using the equation:

$L_0 = a_L \times HL + b_L \times \log(HL) + VP_{constL}$, where

L_0 = a level of loudness = 0,

col 6

HL = hearing loss in dB,

a_L, b_L = constant function parameters, and

VP_{constL} = individual function parameter which adapts the HLL0 function to the data sampling points L_{01}, L_{02}, L_{03}, . . . ,

and that VP_{constL} is determined on the basis of a loudness scaling performed at a minimum of one frequency.

7. (previously presented) The method as in one of the claims 4 to 6 and 11, wherein the hearing loss is used for determining the frequencies at which loudness scaling is performed.

8. (previously presented) The method as in one of the claims 3 to 6 and 10 to 11, wherein the value of the weighted factors depends on the assumed and/or determined accuracy of the loudness scaling data.

9. (previously presented) The method as in claim 8, further comprising the selection of a value of 1/3 for the first factor and/or a value of 2/3 for the second factor.

10. (previously presented), A method for individualizing a hearing aid in adaptation to a loudness perception of an individual, said method comprising the steps of:

measuring and quantifying loudness perception parameters of the individual, weighted by a first factor;

weighting of normal loudness perception parameters by a second factor;

combining the weighted loudness perception parameters of the individual with the weighted normal loudness perception parameters to define a weighted loudness parameter; and

using the weighted loudness parameter for adjusting the hearing aid, wherein

compression and/or amplification is/are adjusted in the hearing aid, for which purpose the compression and, respectively, the amplification are each determined as a function of frequency, and wherein,

for determining the compression, the loudness perception of the individual is quantified by means of a LOHL factor which is determined by loudness scaling at a minimum of one frequency.

11. (previously presented) The method as in claim 10, wherein the LOHL factor is modeled using the equation:

$\log_{10}(\alpha) = a_a \times HL + b_a \times \log(HL) + VP_{consta}$ where

α = gradient of the loudness function,

HL = hearing loss in dB,

a_a, b_a = constant function parameters, and

VP_{consta} = an individual function parameter which adapts the LOHL factor to data sampling points α_1, α_2, α_3, ..., and that VP_{consta} is determined on the basis of a loudness scaling performed at a minimum of one frequency.

12. (previously presented) The method as in claim 11, further comprising the selection of a value of 2/3 for the first factor and/or a value of 1/3 for the second factor.

13. (previously presented) A method for individualizing a hearing aid in adaptation to a loudness perception of an individual, said method comprising the steps of:

measuring and quantifying loudness perception parameters of the individual, weighted by a first factor;